

this difference, I knew a thunderstorm was prevailing beyond my night horizon and he did not. It is well known that the night horizon of an observer is much less than it is in day time, and this I think accounts for the lightning from a cloudless sky as well as for rain from a cloudless sky, both phenomena being reported, as a rule, as having been observed at night. Mr. Weed reports the mountains southeast of his location, and the appearance of clouds about the north end of the mountain and the lightning left of the star and back of the mountains; this places the mountains in the southeast, the lightning east-southeast, and the clouds east and east-northeast; the wind was from the northeast, hence the clouds were evidently driven east of the mountain summits southward, causing the clouds to be beyond the night horizon of Mr. Weed and further, hid by the mountain peaks, so that the clouds should be about where the lightning came from; the lightning flashed upward and could be plainly seen while the clouds were below the horizon or behind the peaks. The description which Mr. Weed gives of the wind indicates also the possibility of a slight disturbance, possibly a local thunderstorm of mild intensity. It is well known that local storms, especially thunder squalls or storms, occur even when the weather map shows no signs of it.

#### MONTHLY STATEMENT OF AVERAGE WEATHER CONDITIONS FOR OCTOBER.

By Prof. E. B. GARRIOTT.

The following statements published on October 1, are based on average weather conditions for October as determined by long series of observations. As the weather of any given October does not conform strictly to the average conditions, the statements can not be considered as forecasts:

In October the storms of the middle latitudes of the north Atlantic Ocean become more frequent and severe and the winds are more pronounced in force and hold more steadily from westerly quarters.

The season of West Indian hurricanes terminates frequently with storms of maximum seasonal severity, and the severer storms are usually experienced in Cuba and the Bahamas. In Porto Rico and the Lesser Antilles storms are less frequent than in August and September. In the Philippine Islands and along the southeastern coasts of Asia typhoons occur less frequently than during September and the late summer months.

In October the wet season begins on the Pacific coast of the United States and rain becomes more general over the middle and northern Plateau regions. In the Rocky Mountain districts and Arizona October rains are light as compared with those of the summer months. Over the country generally from the Rocky Mountains to the Mississippi River there is a diminution of rainfall from June to December. East of the Mississippi the total precipitation averages less than for the summer months, but is more evenly distributed in the form of general rains.

Damaging frost is likely to occur in the United States in October as far south as the interior of the Gulf and South Atlantic States.

#### OBSERVATIONS AT HONOLULU.

Through the kind cooperation of Mr. Curtis J. Lyons, Meteorologist to the Government Survey, the monthly report of meteorological conditions at Honolulu is now made partly in accordance with the new form, No. 1040, and the arrangement of the columns, therefore, differs from those previously published.

#### Meteorological observations at Honolulu, October, 1900.

The station is at 21° 18' N., 157° 50' W.  
Hawaiian standard time is 10<sup>h</sup> 30<sup>m</sup> slow of Greenwich time. Honolulu local mean time is 10<sup>h</sup> 31<sup>m</sup> slow of Greenwich.  
Pressure is corrected for temperature and reduced to sea level, and the gravity correction, -0.06, has been applied.  
The average direction and force of the wind and the average cloudiness for the whole day are given unless they have varied more than usual, in which case the extremes are given. The scale of wind force is 0 to 12, or Beaufort scale. Two directions of wind, or values of wind force or amounts of cloudiness, connected by a dash, indicate change from one to the other.  
The rainfall for twenty-four hours is measured at 9 a. m. local or 7:31 p. m., Greenwich time, on the respective dates.  
The rain gage, 8 inches in diameter, is 1 foot above ground. Thermometer, 9 feet above ground. Ground is 43 feet, and the barometer 50 feet above sea level.

Date.	Pressure at sea level.		Temperature.		During twenty-four hours preceding 1 p. m., Greenwich time, or 2:29 a. m., Honolulu time.										Total rainfall at 9 a. m. local time.
	Dry bulb.	Wet bulb.	Temperature.		Means.		Wind.		Average cloudiness.	Sea-level pressures.					
			Maximum.	Minimum.	Dew-point.	Relative humidity.	Prevailing direction.	Force.		Maximum.	Minimum.				
1.....	29.92	70	68	85	69	67.5	75	ssw-w.	1-0	3-0	29.96	29.86	0.00		
2.....	29.95	76	71.5	87	70	68.5	75	sw-nne.	1-2	3	30.01	29.89	0.26		
3.....	29.95	76	68.5	83	75	66.5	70	ne.	1-4	5	30.02	29.93	0.01		
4.....	29.95	75	68	83	75	65.5	65	ne.	3	6	30.02	29.94	0.18		
5.....	29.97	75	68	83	70	65.0	65	nne.	4	4	30.03	29.95	0.08		
6.....	29.92	72	67.5	82	72	64.5	66	ne.	3-0	5-8	30.01	29.93	0.09		
7.....	29.85	71	67.5	83	70	66.0	71	ne.	2	5	29.94	29.86	0.07		
8.....	29.84	68	66.5	84	70	66.0	72	ne.	1-0	1	29.91	29.81	0.00		
9.....	29.86	72	69	83	68	66.7	74	sw.	1-0	2-0	29.92	29.83	0.01		
10.....	29.90	70	68.5	84	71	67.5	73	sw-ne.	1-2	2-10	29.94	29.87	0.20		
11.....	29.91	75	71.5	87	70	69.5	80	s.	1	3-8	29.97	29.89	0.00		
12.....	29.90	77	71.5	87	83	70.3	73	se-ne.	0-2	7-3	29.98	29.88	0.00		
13.....	29.86	72	69	85	76	69.3	70	ne.	1-3	4	29.93	29.86	0.00		
14.....	29.81	70	67	85	71	68.0	74	nne.	3	3-7	29.90	29.81	0.06		
15.....	29.85	68	63.5	84	69	63.7	65	nne.	1	1-0	29.88	29.78	0.00		
16.....	29.89	76	70	84	65	63.5	67	w-nne.	2-0	1-2	29.94	29.84	0.00		
17.....	29.94	77	72	84	76	69.0	77	nne.	2-0	4-10	30.02	29.92	2.68		
18.....	30.04	77	71.5	82	68	70.3	78	ne.	3	10-6	30.06	29.96	0.13		
19.....	30.07	76	69.5	83	75	68.5	71	ne.	3	10-8	30.11	30.03	0.07		
20.....	30.01	76	69	82	74	65.7	68	ne.	4-2	5-3	30.11	30.01	0.00		
21.....	29.98	73	69	83	76	67.0	68	ne.	3	4	30.04	29.95	0.54		
22.....	29.97	75	70	79	71	67.0	75	ne.	2-5	10-6	30.03	29.96	0.81		
23.....	29.99	77	69	80	70	68.3	73	ne.	3	7	30.04	29.96	0.17		
24.....	29.99	76	69	80	74	66.7	70	ne.	4	7-10	30.06	29.97	0.36		
25.....	29.99	76	69	80	72	67.0	71	ne.	3-5	8-3	30.04	29.97	0.26		
26.....	29.96	76	69	81	72	67.0	71	ne.	3-5	4	30.03	29.94	0.17		
27.....	29.96	75	69	79	72	66.3	69	ne.	3-5	6	30.03	29.93	0.15		
28.....	30.00	74	69	80	73	66.0	69	ne.	4-5	7	30.06	29.98	0.09		
29.....	30.00	75	69	80	74	66.7	72	ne.	3-5	7	30.07	30.00	0.15		
30.....	29.96	76	68.5	81	71	65.7	67	ne.	5-6	4-2	30.06	29.95	0.11		
31.....	29.94	75	69.5	81	72	65.7	69	ne.	5	4	30.02	29.94	0.23		
Sums..															
Means.	29.953	74.0	69.0	82.4	71.8	66.9	71.0		2.7	5.2				6.88	
Departure.	-.006					+0.7	0.0				+0.9			+4.42	

Mean temperature for October, 1900 (6+2+9)÷3=76.9; normal is 76.3. Mean pressure for October (9+3)÷2 is 29.960; normal is 29.966.

\* This pressure is as recorded at 1 p. m., Greenwich time. † These temperatures are observed at 6 a. m., local, or 4:31 p. m., Greenwich time. ‡ These values are the means of (6+9+2+9)÷4. § Beaufort scale.

#### RECENT PAPERS BEARING ON METEOROLOGY.

W. F. R. PHILLIPS, in charge of Library, etc.

The subjoined list of titles has been selected from the contents of the periodicals and serials recently received in the library of the Weather Bureau. The titles selected are of papers or other communications bearing on meteorology or cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled; it shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau:

*Nature*. London. Vol. 62.

MacDowall A. B. Sunspots and Frost. P. 599.

*Ciel et Terre*. Bruxelles. 21me année.

Arctowski, H. Sur les conditions météorologiques des régions antarctiques. P. 379.

Polis, P., et Sieberg, A. L'Observatoire météorologique d'Aix-la-Chapelle. P. 384.

Teisserenc de Bort, L. Sur la mode de formation des types d'isobares. P. 389.